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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/228,087	01/11/1999	BALLARD C. BARE	10980015-1	7323

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EXAMINER	
HARPER, KEVIN C	
ART UNIT	**PAPER NUMBER**
2666	14

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/228,087	BARE, BALLARD C.	
	Examiner	Art Unit	
	Kevin C. Harper	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20,23,26,28,29,31 and 32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20,23,26,28,29,31 and 32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

Applicant's arguments with respect to claims 1-20, 23, 28-29 and 31-32 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 8-10, 11, 18-20, 23, 26-28 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dutt et al. (US 6,202,114) in view of Dobbins et al. (US 5,825,722) and Stone (US 6,041,057).

1. Regarding claim 1, 11, 23, 26-28 and 30-31, Dutt discloses a method operable in a network switch for managing a broadcast tree (Figure 5; Figure 6e; col. 5, lines 43-48; col. 6, lines 9-12 and 26-28 and col. 7, lines 18-22). The method comprises constructing a pruned broadcast tree by propagation of cost information packets (Figure 6e, steps 224-230 and Figure 9; col. 8, lines 38-42; col. 2, lines 26-28) and forwarding received broadcast messages to other network devices according to the pruned broadcast tree (col. 5, lines 33-36 and 43-48). An acknowledgement message is received in response to a periodic cost information packet (Figure 11, steps 245 and 248; Figure 12, steps 252, 256 and 260; col. 9, lines 15-17 and 25-39; Figure 6b, steps 85, 86 and 89) to indicate whether an associated path should be used for broadcast to an identified network device (col. 5, lines 33-36 and 43-48). The determined broadcast path is the lowest latency path (col. 7, lines 2-4 and lines 42-51) and subsequent acknowledgements are not used to establish the broadcast path between an edge switch and a receiving switch (Figure 12,

step 274-275; col. 9, line 66 through col. 10, line 6). However, Dutt does not disclose that the cost information packets are dynamic. Dobbins disclosed dynamic cost information packets used in network routing (col. 3, lines 43-53). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use dynamic cost information in the invention of Dutt as evidenced by Dobbins in order to optimize routing within a network by accommodating changes in the links that connect the switches. Further, Dutt in view of Dobbins does not disclose a broadcast learn flag in an acknowledgement packet. Stone discloses an acknowledgement packet with an acknowledging flag (Figure 6) to indicate whether a link or port will be used to receive messages on a switch (col. 9, lines 61-67). Therefore, it would have obvious to one skilled in the art at the time the invention was made to include a flag in an acknowledgment packet in the invention of Dutt in view of Dobbins in order to specify whether or not forwarding on a port should be performed, while acknowledging that the destination switch has received a previously transmitted message. Further regarding claim 11, Dutt does not disclose that the network switch includes a computer readable storage medium embodying the method of managing a broadcast tree. One skilled in the art would recognize that communications processors typically utilize computer readable storage media to execute controlling program information. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have a processor execute programmable instructions in the invention of Dutt in view of Dobbins and Stone in order to allow for flexibility in the operation of a processor controlling a network switch.

2. Regarding claims 8-10 and 18-20, in Dutt an alternate port is found in response to a failure (abstract, lines 1-5; Figures 12 and 13) by propagating cost information packets (abstract, lines 2-6; col. 5-15).

Claims 2-7 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dutt et al. in view of Dobbins et al. and Stone, as applied to claims 1 or 11 above, and further in view of Allon et al. (5,539,883).

3. Regarding claims 2, 6, 12 and 16, Dutt in view of Dobbins and Stone discloses a pruned broadcast tree established according to dynamic cost information packets. However, Dutt in view of Dobbins and Stone does not disclose that the pruned broadcast tree is constructed responsive to an exchange of load balancing information. Allon discloses that a pruned tree is established in response to load balancing information (abstract, lines 3-15; Figures 2-4). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to prune a tree according to load balancing information in the invention of Dutt in view of Dobbins and Stone as evidenced by Allon to evenly distribute a network load (Allon, col. 1, lines 24-28).

4. Regarding claim 3 and 13, in Dutt an indicia is received (Figure 6e, step 220) that the pruned broadcast tree should include the port for future broadcasts (step 228).

5. Regarding claims 4 and 14, Dutt in view of Dobbins and Stone does not disclose receiving an indicia that the pruned broadcast tree exclude a port. Allon discloses that a pruned tree is established in response to load balancing information (abstract, lines 3-15; Figures 2-4). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to prune a tree according to load balancing information in the invention of Dutt in view of

Dobbins as evidenced by Allon to evenly distribute a network load (Allon, col. 1, lines 24-28). Further, Allon discloses a network switch (Figure 2A, item 0) receives a request on a port for deleting the port on the tree (Figure 1B, "DISENGAGE(r)?", "CLEAR PARENT FIELD", "PRUNE CR"). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have a request to remove a port from a pruned tree in the invention of Dutt in view of Dobbins and Stone as evidenced by Allon in order to reduce the loading on a particular network node operating in a load balancing domain..

6. Regarding claim 5 and 15, in Dutt the packet is a cost acknowledgement packet (Figure 12, steps 266 and 272 or 270 and 273; col. 9, lines 15-17; col. 8, lines 48-49 and 40).

7. Regarding claims 7 and 17, Dutt in view of Dobbins and Stone does not disclose transmitting a message to ports not in a load balancing domain. Allon discloses that a pruned tree is established in response to load balancing information (abstract, lines 3-15; Figures 2-4). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to prune a tree according to load balancing information in the invention of Dutt in view of Dobbins and Stone as evidenced by Allon to evenly distribute a network load (Allon, col. 1, lines 24-28). Further, Allon discloses that a message is transmitted to ports for nodes not in the load balance domain (col. 12, lines 36-40). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to transfer a packet to a port not in the load balance domain in the invention of Dutt in view of Dobbins and Stone as evidenced by Allon in order to route data among destinations which do not participate in load balancing.

Claims 29 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dutt et al. in view of Dobbins et al. and Stone as applied to claims 1 or 11 above, and further in view of Lamport et al. (US 5,138,615).

8. Regarding claims 29 and 32, Dutt in view of Dobbins and Stone does not disclose recomputing a broadcast tree in response to detecting a fault. Lamport discloses reconfiguring a network upon detecting a change or fault in the network (abstract, last five lines; col. 39, lines 3-9). Therefore, it would have been obvious to recompute a broadcast tree upon detecting a fault in the network of Dutt in view of Dobbins and Stone in order to compute a valid set of paths through the network when a fault alters the topology of a network.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Harper whose telephone number is 703-305-0139. The examiner can normally be reached weekdays, except Wednesday, from 9:30 AM to 8:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao, can be reached at 703-308-5463. The centralized fax number for the Patent Office is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin C. Harper

March 21, 2004

DAVID TON
PRIMARY EXAMINER